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Philosophical Transactions

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hole full at *Spring*, which was bored that time Twelve-Moneth before, and yielded not any ſap at all that *Spring*, as far as could be obſerv'd, and was not come to its ſeaſon of bleeding the ſecond *Spring*, when the Jelly was obſerv'd in the bor'd hole *. The *latter*, of the *Walnut* not bleeding but in cold weather, being inconſiſtent with the Obſervations, often made by me of that Tree, not only bleeding and bleeding longer in warmer weather, but bleeding longer at the roots on the South-ſide in the Sun, than on the North-ſide in the Shade, and conſtantly governing the Courſe of its Sap in its beginning to riſe and to ſtop daily at the riſing and ſetting of the Sun; I ſhall betake my ſelf, inſtead of opining, to make ſome naked *Queries* for the finding out the matter, *viz.*

* *See* Numb. 44. p. 880.

1. Whether this Obſervation of Mr. *Willoughby*'s concerning the *Walnut-Tree*, was in Roots, Body, Branches; all, or ſome, or one?

2. Whether the Sap of a Tree, as to its motion, be not influenced from the Full or Wane, or other Aſpect of the Moon to the Sun, *&c*?

3. Whether the *Walnut*, being a more ſolid Wood, have not ſome alteration as to heat, aſcent of Sap, *&c.* from thence different from *Birch*?

4. What the Age and Bulk of the Tree, conſuming perhaps inſenſibly what roſe inſenſibly in hot, not in cooler Weather?

5. What the time of the Year? The *Aſpes* run only, as M. *Midford* relates, before *February*; the *Hopp* about Hopp-harveſt. *Withies* in *April*, &c.

6. Whether the weight of the Atmo-ſphere will put ſome check to Sap riſing in that part of the Root, which is cut off from the Body? And whether the excluſion of that Imped ment, by cloſing the cut Root in Glaſs, will cauſe any ſenſible alteration: to be tried in ſeveral Roots of the ſame Tree of like Diameter.

I want a good *Thermometer*, *Barometer*, and *Hygro-meter*, (or if you will have Engliſh Names for them, a Heat-Weight-and-Wet-Wiſer) to make more accurate Obſervations, how far the aſcending of Sap depends on the Air, and the ſeveral temperatures of the ſame.

An Extract of a Letter

Written by Francis Willoughby *Eſquire to the Publiſher, containing ſome Obſervations of his made on ſome* Sycamore-Trees, *the* Black-Poplar, *and the* Walnut: *As alſo his thoughts about the* Dwarf-Oaks, *and the* Stellar Fiſh *deſcribed in* Numb. 57.

I Am ſorry, I cannot return you a better Anſwer to yours of *March* 19; the Experiments, which our leaſure hath ſince permitted us to make, being not ſufficient to found a new *Hypotheſis* on, to con-

confirm Dr. *Tong*'s. Since the Leaves have been explicated, we have obſerv'd the *Sycamore* after ſeveral froſty nights to bleed afreſh in the morning, ſoon after Sun-riſing, when it had ceaſed ſeveral dayes before: Though this muſt not be underſtood of all Sycamores, but of ſome only that are more ſenſible and obſervant of the Weather.

April 3*d.* and 4*th.* all the Sycamores quite ceaſed.

The 5*th.* being after a white froſt, they began to bleed about 8 a clock, and ceaſed towards noon.

The 9*th*, 12*th*, 13*th*, 15*th* they bled again.

The 10*th*, 11*th*, 14*th* were not obſerved.

This 16*th* they bled not, it being rainy, and the Sun not ſhining.

From the Obſervations we have hitherto made, we think it may be certainly inferr'd, that a morning-ſun after a froſt will make all the Bleeding Tribe bleed afreſh, though they had before ceaſed; and that this new bleeding towards the latter end of the ſeaſon commonly ceaſeth before morning. Poſſibly ſome may bleed after a froſt, yet further in the Summer.

I obſerved laſt year in *Auguſt* a copious and ſpontaneous exudation, very like bleeding, of a viſcous yellow Juice out of the buds of a black Poplar. Our *Walnut*-trees bleed here in *January*.

The *Starre-fiſh*, in the laſt *Tranſactions*, is the *Stella arboreſcens Rondeletii p.* 121. firſt deſcribed by him, and ſince by other Naturaliſts.

There is no ſuch dwarf-*Oak* in *Old England*, growing wild, as was ſent you out of *New-England*, nor in any other Country, where we have been, unleſs it be the *Ilex coccifera*, which is a low ſhrub, bearing large Acorns, and hath a prickly leaf like Holly. If it prove that, it will be a lucriferous diſcovery. ——*Midleton* in *Warwick ſhire April* 16. 1670.

An Account of ſome Books.

I. Joh. Sig. Elſholtii, Elector. Brandenburg. Medici, *CLYSMATICA NOVA, ſive Ratio in venam ſectam Medicamenta immittendi. COLONIÆ BRANDEBURGICÆ.* 1667. in 8°.

THe *Title-page* of this Book, but very lately come into *England*, ſhews this to be the *ſecond Edition*: and the Author in the Concluſion of it tells the Reader, that the *firſt* Edition thereof was publick *A.* 1665. at which time he affirms there had been nothing printed (for ought he knew) either by *Engliſh*, *French*, or *Italians*, of this argument. To which we ſhall here ſay nothing, but refer the Candid Reader to what hath been ſaid already (by way of vindicating the Invention, both of *Infuſing* Medical Liquors, and of *Transfuſing* Blood, from uſurpation)